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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/878, 908 06/19/97 LAUTERJUNG

K 09114/005001

EXAMINER

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ART UNIT	PAPER NUMBER
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3738

25

DATE MAILED:

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 25

Application Number: 08/878,908

Filing Date: June 19, 1997

Appellant(s): Lauterjung

MAILED

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GROUP 1

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed October 30, 2000.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct. However, the Examiner would like to explain something with respect to the claim language that may be confusing. Specifically, claims 21-25 and 28 call for "annular springs each having a first pair of loops extending in one direction and a second pair of loops extending in another direction"; see Claim 21, lines 2-3. These loops are not separate from the folds but are actually formed by the folds; see Figures 4 and 5 of the specification wherein elements (38) are the loops as claimed.

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(6) *Issues*

The appellant's statement of the issues in the brief is substantially correct. The issues would be more closely match the guidelines set by the Manual of Patent Examining Procedures if they were set forth as follows:

(1). Whether claims 21-25 and 28 are anticipated under 35 USC 102(b) by Lazarus (WO 89/08433).

(2). Whether claims 21-25 and 28 are anticipated under 35 USC 102(e) by Robinson et al (US 5,733,325).

(3). Whether claims 63-65 are anticipated under 35 USC 102(b) by Kwan-Gett. (US 5,151,105).

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 21, 24, 25, and 28 are grouped together and claims 64 and 65 are grouped together. That leaves, by elimination, claims 22, 23, and 63 which do not stand or fall together. Appellant provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *ClaimsAppealed*

A substantially correct copy of appealed claims appears on pages i to iii of the Appendix to the appellant's brief. The minor errors are as follows:

(1). Claims 32, 33, and 36 are included with the claims copy even though they are allowed.

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(2). Claim 28 should include the word "further" after "21" and before "including" in order to be correct.

(9) *Prior Art of Record*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,733,325	Robinson et al	3-1998
5,151,105	Kwan-Gett	9-1992
WO 89/08433	Lazarus	9-1989

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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Claims 21-25 and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lazarus (WO 89/08433); see the whole document, especially page 8, lines 18-24 and Figures 2 and 3.

With regard to claim 22 specifically, the Examiner posits that the claimed feature is inherently present in the Lazarus device because it depends upon how the device is placed within the body.

Claims 21-25 and 28 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Robinson et al (US 5,733,325); see the whole document, especially the figures and the “Detailed Description of the Invention”.

Claims 63 to 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Kwan-Gett (US 5,151,105) wherein elements 18 and 20 of Kwan-Gett are overlapping windings of resilient wire; see the whole document, especially Figures 2 and 7 as well as Col. 5, lines 19-31.

With regard to claims 64 and 65, the Examiner asserts that this is an inherent feature of wound rings versus solid rings of the same diameter based upon the additive versus exponential increase in strength based upon cross-sectional diameter.

(11) Response to Argument

Issue 1

In response to Appellant’s traversal of Lazarus (starting on page 8 of the Appeal Brief) that Lazarus teaches away from the claimed invention because the staple (16) is compressed not folded, the Examiner asserts that the claims are not drawn to methods of using or making such

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that the manipulation of the staple is relevant. Clearly, Lazarus has a folded wire; see Figures 3 and 4. Furthermore, since the staple (16) and graft of Lazarus is resiliently compressed, it constitutes a "spring" in that it is an "elastic device, such as a coil of wire, that regains its original shape after being compressed or extended"; first noun definition in American Heritage Dictionary, Second College Edition, page 1182.

Appellant next argues that the spring of Lazarus cannot be folded. However, the Lazarus staple is clearly folded and that is all which is required to meet the claim language. The folded nature of the Lazarus device is self-evident and any reasonable Examiner would interpret the Lazarus device as being folded.

Additionally, the Board of Appeals is directed to note that claims 21-25 and 28 call for "annular springs each having a first pair of loops extending in one direction and a second pair of loops extending in another direction"; see Claim 21, lines 2-3. These loops are not separate from the folds but are actually formed by the folds; see Figures 4 and 5 of the specification wherein elements (38) are the loops as claimed.

Next, Appellant argues that the pair of loops are arranged to avoid occlusion of the renal artery. To this, the Examiner asserts that the limitation referred to is one of intended use because the arrangement set forth can only be practiced during its use. In other words, the limitation depends upon how the device is inserted into the blood vessel not on any particular design of the vascular prosthesis. In addition, the Lazarus device is designed and capable of

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use within the same vascular passages as Appellant intends to use his device. For these reasons, this claim limitation is considered to be fully met.

In response to the traversal of the claim 23 rejection, the Board is referred to Figure 6 of Lazarus which shows that the staple is still folded and within the tubular graft. Therefore, if the staple were stretched out radially so that it no longer had folds in it than the staple (16) would have a diameter greater than the **compressed** diameter of the tubular graft. Since Appellant's claims do not specify which diameter of the tubular graft is being referred to, the Examiner posits that the compressed diameter of the tubular graft is a suitable diameter. Furthermore, by inspection of the Figure 6, it can be determined that the staple (16), if stretched to an unfolded state, would be larger than the blood vessel. Particularly, if the diameter of the staple is taken to be approximately 2 support members (4 legs) in Figure 6 and if those legs were straightened out, they would result in an overall diameter of approximately 36 mm. The blood vessel, on the other hand, measures 27 mm in inner diameter. From this, the Examiner reasons that a fully expanded staple in Figure 6 would also be larger than a fully expanded graft because the graft should have an expanded diameter approximately equal to the inner diameter of the blood vessel.

Issue 2

With regard to the traversal of the Robinson et al rejection, it is noted that Appellant argues both the patentability of the claims with regard to Robinson et al and Lazarus at the same time. For this reason, the Examiner hereby incorporates the Examiner's arguments from

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"Issue 1" above which are directly relevant herein. However, instead of "staple", Robinson et al uses the word "anchor" to describe the supporting element of the vascular prosthesis.

Furthermore, with regard to the arguments against claim 22, it is noted that the occlusion prevention limitation is not in a means plus function format. Therefore, it would not be proper to the Examiner to interpret the claims as if an explicit recitation of the function be described by Robinson et al, or for that matter, by Lazarus. It is noted however, that Robinson et al discloses the use of his device in the same location as that called for in claim 22. One would have to assume that the Robinson et al device would be inoperative if it could not be used to avoid occlusion of the renal arteries. Since patents are presumed to be operative for their intended function and use, it would be improper to decide that Robinson et al was inoperative without evidence.

In response to the traversal of claim 23, the Board of Appeals is directed to Figure 15 which shows that the still uncompressed end of the anchor is larger than the compressed end graft. Furthermore, this uncompressed end could still be further expanded such that there would be substantially eliminated. For these reasons, it is the Examiner's position that claim 23 is read on by Robinson et al.

Issue 3

The Board of Appeals is directed to jump ahead to page 11 of the Appeal Brief. Appellants argue that Kwan-Gett does not disclose a wire of overlapping windings on the ends, but rather, a torsion spring made of a flat strip of metal. However, the Examiner notes that

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claims do not require a cylindrical cross-section wire and that the flat strip of metal constitutes a wire to the extent required by the present claim language. Appellant's specification has no special definition of wire such that the claim language term would be given something other than its ordinary definition. American Heritage Dictionary defines wire as "A usually pliable metallic strand or rod made in many lengths and diameters, sometimes clad and often electrically insulated, used chiefly for structural support or to conduct electricity."; definition 1 on page 1385 of American Heritage Dictionary, Second College Edition. Since there is nothing in the definition of "wire", "strand", or "rod" requiring a particular cross-sectional shape and since a "diameter" can be across any shape, not just of a circle, it is the Examiner's position that the flat spring material of Kwan-Gett (elements (18) and (20) of Figure 2) constitutes a wound wire. Even Appellant's own definition does not require a circular cross-section because it states "usually circular in cross-section"; see the second to last line on page 11 of the Appeal Brief. For this reason, it would be improper on the Examiner's part to read a particular cross-sectional shape into the claim language.

In the traversal of the claim 65 rejection (see pages 9-11 of the Appeal Brief), the Appellant argues that Kwan-Gett does not provide the structure or teaching for the minimum bending diameter. However, the Examiner notes that claim 65 does not even set forth what dimensions are being compared to a solid ring. Furthermore, the Examiner posits that the minimum bending diameter, since it is a measured physical property, is inherently present in the Kwan-Gett spring due to the fact that it is an elastically deformable material. Nonetheless,

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even though claim 65 does not require a particular dimension comparison to a solid ring, the Examiner will address Appellant's arguments in this regard. Specifically, the minimum bending diameter is disclosed as being based on the diameter of the individual strands of the ring windings. (The name "minimum bending diameter" appears to be a misnomer for "bending force"). However, the Examiner posits that the controlling dimension for bending is really the cross-sectional area. In this case, the total cross-sectional area of all the individual strands of the ring verses the total cross-sectional area of a solid ring is to be compared. Therefore, the Examiner posits that the force required to deform (i.e. strain) a ring of many windings is lower than that of a solid ring because a solid ring has a greater cross-sectional area. This is due to the fact that there are spaces between the individual windings because the windings do not fit together perfectly. These spaces actually reduce the cross-section area of the ring as compared to a solid ring of the same diameter which has no spaces. For this reason, a solid ring of the same diameter as a ring of wound wire will require a higher bending force because it has a greater cross-sectional area of metal. As a result, the limitation of claims 64 and 65 is met because it is an inherent feature to a wound ring as compared to a solid ring.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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January 10, 2001



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